Master Syllabus

Course Name: GENERAL PHYSICS LAB II Proposed Course Number 211L

Lecture hours: 0 Lab hours: 2 Credit hours: 1

Suggested Enrollment Cap: 24

Course Description: Includes selected experiments dealing with electricity, magnetism, optics, and modern physics.

Prerequisite: Physics 210 L

Corequisite: Physics 211

Learning Outcomes and Assessment Measures

Upon completion of Physics 211L, the student will be able to achieve the following with a 70% or better success rate:

- conduct experiments using a wide range of experimental procedures and techniques, effectively using and transferring the skills learned in Physics 210 as shown on assignments and exams;
- collect, organize, analyze, and present data correctly and precisely using appropriate statistical and graphical methods on assignments;
- estimate and assess uncertainties in collected data, explaining the existence of unexpected results in data sets on laboratory reports and assignments;
- properly report experimental data using appropriate graphing methods, significant figures, accuracy, and precision on laboratory reports and other assignments;
- use the scientific method to effectively make observations, make rational predictions, collect data, interpret, and statistically evaluate experimental results; follow technical writing guidelines to write concise and comprehensive laboratory reports.

Assessment:

- Individual instructor-designed exams will collectively assess all of the learning outcomes and will be administered during the semester as listed in the course syllabus.
- Individual instructor-designed comprehensive final exam, adhering to a department-determined content, will assess all learning outcomes.
- Individual Instructor-designed or collaborative instructor-designed assignments will be given as a portion of the total grade and will include homework, quizzes, individual and collaborative group assignments and laboratory reports; all assignments will be graded using an instructor-designed rubric.

Expanded Course Outline:

I. Electricity and Magnetism
   A. Electric Fields
   B. Ohm's Law
   C. Series and Parallel Circuits
   D. Magnetic Fields
   E. Conductors
   F. Alternating Current Impedance
II. Optics and Waves
   A. Reflection/Refraction
   B. Images and Converging/Diverging Lenses
   C. Polarized Light
III. Quantum and Nuclear Physics
   A. Line Spectra
   B. The Photoelectric Effect